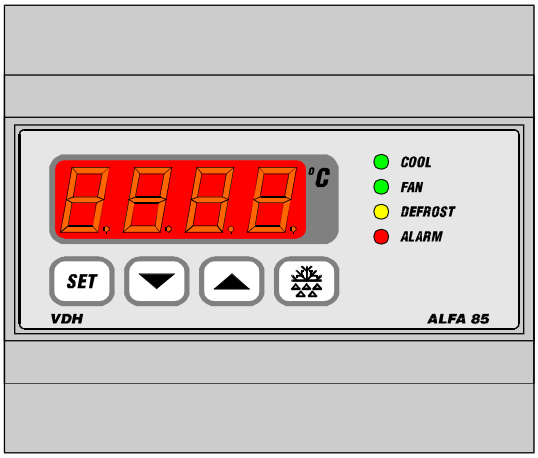
User manual
ALFANET 85
Cool thermostat with fan and defrost control



VDH doc. 080645 **Version: v1.0** **Date: 19-05-2008**
Software: ALFANET85 **File: Do080645.WPD** **Range -40/+50°C**

* Installation.

On the side of the ALFANET 85 and on the connection diagram is shown how to connect sensors, power supply and the relays.
After connecting the ALFANET 85 to the power supply a self-test function is started. Next the measured temperature of the control sensor is shown in the display (normal operation mode).

* Control.

The ALFANET 85 thermostat can be controlled by four push buttons on the front.
These keys are:

SET	: view/change the set point
UP	: increase the set point
DOWN	: decrease the set point
DEFROST	: manual start/stop the defrost

* View set point.

By pushing the SET key, the set point is shown. Also the decimal point of the most right display starts flashing. A few seconds after releasing the SET key, the set point disappears and the measured value is shown again.

* Changing set point.

Push the SET key to show the set point. Release the set key. By pushing the SET key simultaneously with the UP or DOWN keys the set point can be changed. A few seconds after releasing the set key the measured value is shown on the display.

* Read-out defrost sensor.

Push the UP key to show the value of the defrost temperature sensor.

* View clock time.

Push the UP and DOWN keys simultaneously. The display will show the present time. The decimal point between hours and minutes starts flashing.

* Changing time.

Push the UP and DOWN key simultaneously to show the time. By pressing the SET key simultaneously with the UP or DOWN key the time can be set. A few seconds after releasing the keys, the measured value is shown in the display.

* Start/stop defrost cycle.

The defrost cycle is automatically started and stopped. Settings by via the Internal Parameters.
The defrost can be changed manually:

STOP : If defrost is on, the defrost can be stopped manually by pushing the DEFROST key.

START : If no defrost is on, the defrost can be started manually by pressing the DEFROST key.

* Setting internal parameters.

Next to the adjustment of the set point a number of internal settings are possible, like differentials, sensor offsets, set point range, cooling settings, fan settings and defrost settings.
By pushing the DOWN key for more than 10 seconds, the 'Internal Parameter Menu' is entered. The display shows P01. By the UP and DOWN keys the required parameter can be selected (see table for parameters).
When the required parameter is selected, press the SET key to show the value of this parameter. By pushing the UP or DOWN keys the parameter value can be changed.
If for 30 seconds no key is pressed, the ALFANET 85 will return to its normal operation mode and the changes are stored.

* Adjustment of sensors.

The control sensor can be adjusted withe the 'offset control sensor' (parameter 05). Indicates the control sensor e.g. 1,2°C too much, the sensor offset should be reduced with 1,2°C. The defrost sensor is adjusted with the 'offset defrost sensor' (parameter 07).

* Reset of alarm.

During alarm the alarm relay and the internal buzzer are activated. By pressing the SET key the buzzer will stop and the alarm relay, depending on the internal settings, will drop. The error message remains flashing in the display, until the cause of the failure is solved.

* Fan control options.

The ALFANET 85 has various settings for the evaporator fan. Normally the fan runs continuously, except if one the the parameters mentioned below is set to 1.

Parameter 20 = 1 Fan switch differential active

The fan only runs if the temperature of the defrost sensor is lower than the temperature of the control sensor minus the fan switch differential (P 21)

Parameter 24 = 1 Fan off during defrost.

To prevent that after the defrost and drip-off time the fan starts to run and warm air is blown into the cold room, two conditions can be set:

a. The fan is blocked until the defrost sensor reaches a temperature lower than the temperature set with parameter 25.
b. The fan is blocked until the defrost delay of parameter 26 has passed, unless the defrost sensor reaches the switch-on temperature of parameter 25. If the defrost sensor is broken, the ALFANET 85 will run he time of parameter 26 before the fan is started.

Parameter 22 = 1 Fan off if cooling off.

The fan is stopped if the cooling is stopped. This is done through the delay of parameter 23.

* Defrost control options.

The automatic defrost is started by the defrost interval time and stooped after the maximum defrost time or sooner is the defrost sensor reaches the set end-of-defrost temperature. The ALFANET 85 has various automatic defrost options that can be set with the following parameters.

Parameter 34 = 0 Defrost with fixed defrost intervals.

Hereby parameter 30 is always the selected interval time.

Parameter 34 = 1 Defrost based on the total cooling run time.

Hereby the defrost is started if the cooling has run the time set with parameter 30.

Parameter 38 = 1 The ALFANET 85 start with defrost when switched on.

The ALFANET 85 starts with a defrost cycle if the ALFANET 85 is switched on, whereby first the defrost-swtich-on-delay (parameter 39) is passed. During this delay the cooling can be on, after which the defrost is started.

Parameter 33 = 1 For hot-gas-defrost systems the cooling is switched on during defrost.

After the defrost the drip-off time (parameter 37) is started. During this time the defrost relay is not active and the evaporator can drip off. During this time the cooling will not run.

* Parameters ALFANET 85.

Para-meter	Description	Range	Default Value
P 01	Switch differential cooling	0.1..15.0°C	0.5
P 02	Minimum set point setting	-40.0..50.0°C	-40.0
P 03	Maximum set point setting	-40.0..50.0°C	50.0
P 04	Offset control sensor	-10.0..10.0°C	0.0
P 05	Offset defrost sensor	-10.0..10.0°C	0.0
P 10	Switch on delay cooling	0..99	0
P 11	Switch off delay cooling	0..99	0
P 12	Parameter 10/11 in seconds or minutes	0 = sec 1 = min	0
P 13	Minimum on time cooling	0..99 minutes	0
P 14	Minimum off time cooling	0..99 minutes	0
P 20	Fan switch differential active	0 = No 1 = Yes	0
P 21	Switch differential fan	0.1..50.0°C	2.0
P 22	Fan off if cooling off	0 = No 1 = Yes	0
P 23	Switch off delay fan	0..99 minutes	0
P 24	Fan off during defrost	0 = No 1 = Yes	0
P 25	Switch on temperature fan after defrost	-50.0..50.0°C	2.0
P 26	Switch on delay after defrost	0..99 minutes	0
P 30	Defrost interval time	1..99 hours.	12
P 31	Maximum defrost time	0..99 minutes	15
P 32	End-of-defrost temperature	-40.0..50.0°C	2.0
P 33	Cooling on during defrost	0 = No 1 = Yes	0
P 34	Defrost on compressor run time	0 = No 1 = Yes	0
P 35	Display fixed during defrost	0 = No 1 = Yes	0
P 36	Maximum display fixed time after defrost	0..99 minutes	10
P 37	Drip-off time	0..99 minutes	0
P 38	Start with defrost after power failure	0 = No 1 = Yes	0
P 39	Defrost delay after start-up	0..99 minutes	0
P 40	Defrost on real time bases	0 = No 1 = Yes	0
P 41	Start defrost 1	00:00..23:59,OFF	00:00
P 42	Start defrost 2	00:00..23:59,OFF	04:00
P 43	Start defrost 3	00:00..23:59,OFF	08:00
P 44	Start defrost 4	00:00..23:59,OFF	12:00
P 45	Start defrost 5	00:00..23:59,OFF	16:00
P 46	Start defrost 6	00:00..23:59,OFF	20:00
P 47	Start defrost 7	00:00..23:59,OFF	OFF
P 48	Start defrost 8	00:00..23:59,OFF	OFF
P 50	Type alarm	0 = none 1 = absolute 2 = relative	1
P 51	Minimum alarm set point	-40.0..50.0°C	-40.0
P 52	Maximum alarm set point	-40.0..50.0°C	50.0
P 53	Time delay minimum alarm	0..99 minutes	0
P 54	Time delay maximum alarm	0..99 minutes	0
P 55	Reset alarm when alarm disappears	0 = No 1 = Yes	0
P 56	Alarm relay off after manual reset of alarm	0 = No 1 = Yes	0

Para-meter	Description	Range	Default Value
P 80	Cooling and fan off when door open	0 = No 1 = Yes	1
P 81	Maximum cooling and fan off time when door open	0..99 min.	30
P 82	Control delay after power failure	0..99 min	0
P 83	Cooling on at sensor failure	0 = No 1 = Yes	0
P 90	RS 485 network number	1..255	1
P 91	Log interval	1..60 min	10
P 95	Software version	-	-
P 96	Production date	-	-
P 97	Serial number	-	-

* Error messages.

In the display of the ALFANET 85 the following alarm messages can be shown.

Lo 1 : minimum alarm control sensor
Hi 1 : maximum alarm control sensor
E 1* : control sensor broken
E 2* : defrost sensor broken
EE1/EE2 : settings are lost

Solution E1/E2 : Check if sensor is connected correctly
Check the sensor (1000Ω/25˚C)
Replace sensor
Solution EE1/EE2 : Program settings again

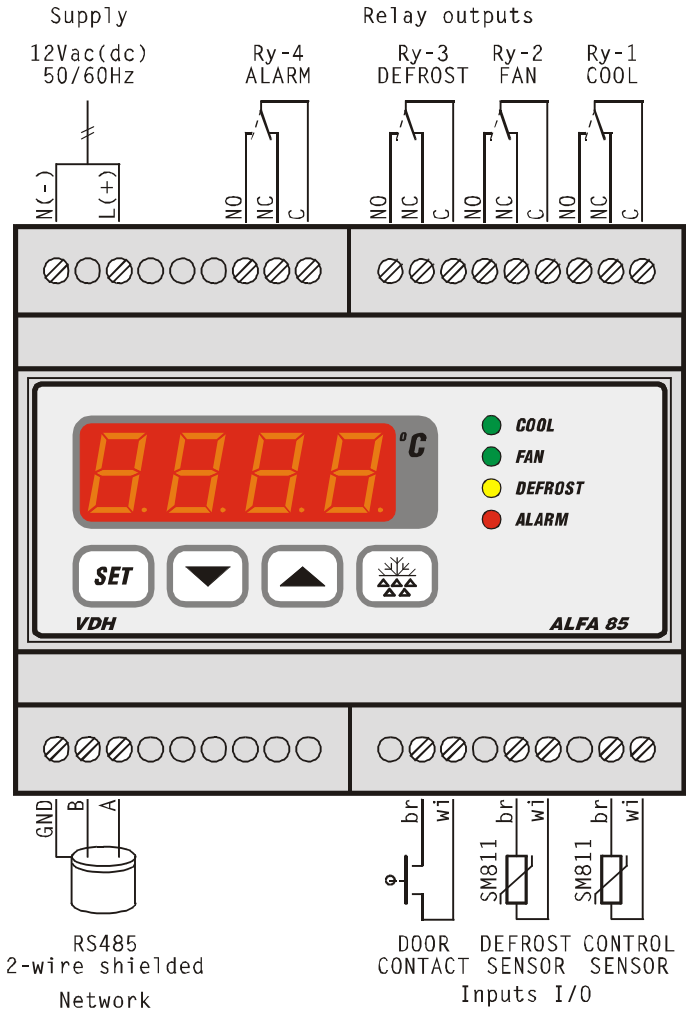
*)
-L- In case of a short in the sensor the display will alternate between the error code E.. and -L- to indicate a short of the sensor
-H- In case op an open sensor circuit the display will alternate between the error code E.. and -H- to indicate and open sensor circuit.

* Technical data.

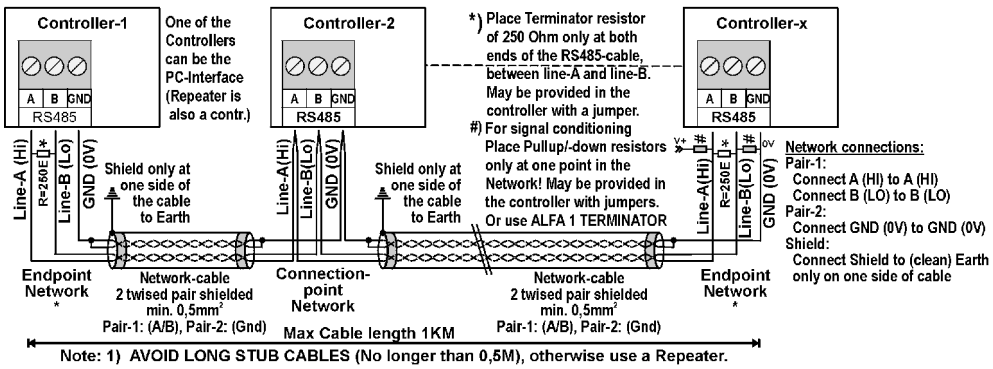
Type : ALFANET 85 thermostat
Range : -40/+50˚C with read-out per 0,1˚C
Supply : 12 Vdc/ac 50/60Hz (-5/-10%)
Read-out : 4 number 7 segment display
Status LED : cool, fan, defrost, alarm
Relay cooling : SPST 250V/8A (cos phi=1)
Relay defrost : SPST 250V/8A (cos phi=1)
Relay fan : SPST 250V/8A (cos phi=1)
Relay alarm : SPST 250V/8A (cos phi=1)
Control : by four push buttons on the front
Front : polycarbonate
Sensor : 2x SM 811/2m (PTC 1000Ω/25˚C)
Digital input : door contact (potential free)
Communication : RS 485 (2x twisted pair shielded min. 0.8mm^2)
Dimensions : 106x90x58mm (whd)
Accuracy : ± 0,5% of the range

- Provided with memory protection during power failure.
- DIN-rail mounting.
- Provided with self test function and sensor failure detection.
- Special models available upon request.

* Connections.

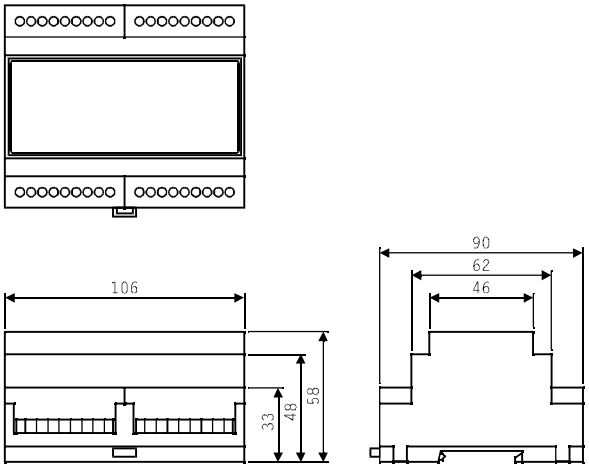


RS 485 NETWORK CONNECTIONS 2-twisted pair shielded cable:



Note: 1) AVOID LONG STUB CABLES (No longer than 0,5M), otherwise use a Repeater.

* Dimensions.



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